Ambient Weather OBSERVERIP Receiver User Manual

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1. Introduction

Thank you for your purchase of the OBSERVERIP Receiver. The following user guide provides step by step instructions for installation, operation and troubleshooting. To download the latest manual, firmware upgrades and IP Finder Tools, visit:

http://www.ambientweather.com/observerip.html

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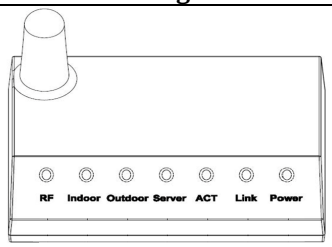
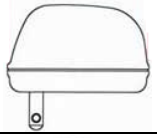
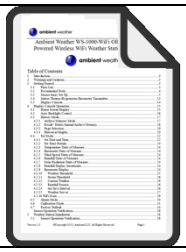
2. Parts List

QTY	Item	Image
1	ObserverIP Receiver Dimensions (LxWxH): 3x2x1”	
1	5V DC Adaptor	
1	Ethernet Cable	
1	User manual	

3. ObserverIP Receiver

3.1 Hardware Requirements

1. Broadband router
2. An “always-on” connection to the Internet. A high speed DSL or cable internet connection that maintains constant connection to the internet.
3. AC Power

3.2 Software Requirements

An IP scan tool is required to locate the ObserverIP on the network.

Important Note: Download ObserverIP tools at the following location:

www.AmbientWeather.com/observerip.html

3.3 ObserverIP Connections

Connect the ObserverIP receiver power jack to AC power with the power adapter (included), as shown in Figure 2, reference 10.

Connect the OberverIP receiver to your router using the Ethernet cable (included), as shown in Figure

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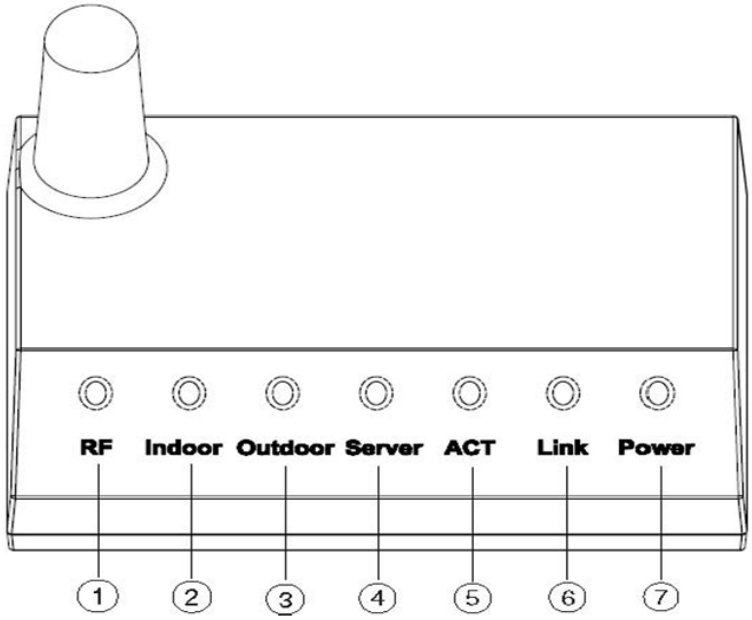
2, reference 8.

Place the sensor array and indoor thermo-hygrometer transmitter about 5 to 10 feet from the ObserverIP receiver and wait several minutes for the remote sensors to synchronize with the receiver. Once synchronized, the Indoor blue LED (Figure 1, reference 2) and Outdoor blue LED (Figure 1, reference 3) will be illuminated.



Ref.	LED	Description
1	RF	On when radio frequency receiver is operating properly
2	Indoor	On when indoor sensor received
3	Outdoor	On when outdoor sensor array received
4	Server	On when connected to Wunderground.com internet hosting service
5	ACT	Flashes when there is internet activity
6	Link	Connected to the Internet (or router)
7	Power	AC Power connected

Figure 1

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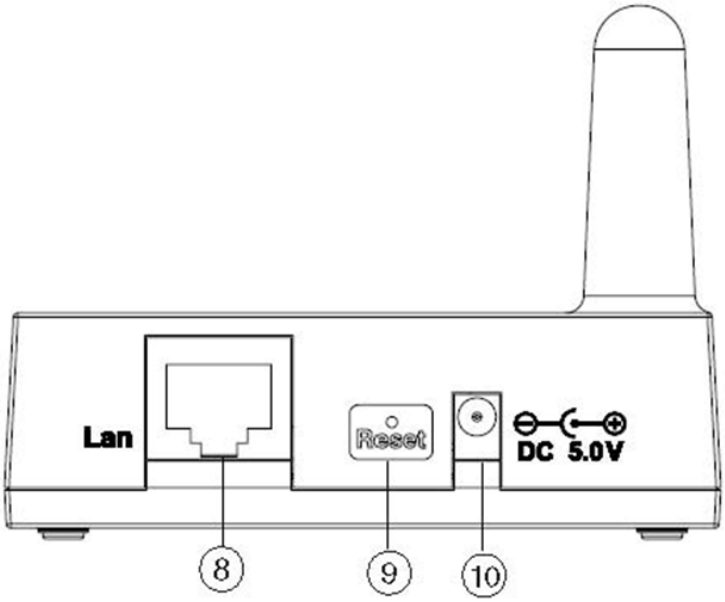

Ref.	Description
8	LAN connection (connect to router)
9	Reset button
10	AC Power connection

Figure 2

3.4 Finding the ObserverIP from your computer

3.4.1 PC Users

To find the ObserverIP receiver, launch the IP Tools application downloaded here:

www.AmbientWeather.com/observerip.html

The HostIP (your computers IP address) will be displayed. Press the **OK** button to continue.

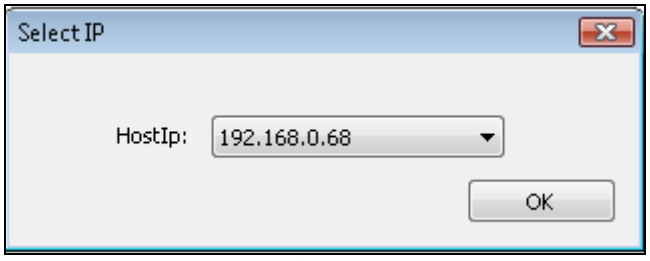

Figure 3

Select the **Search** button to find the ObserverIP on your local area network.

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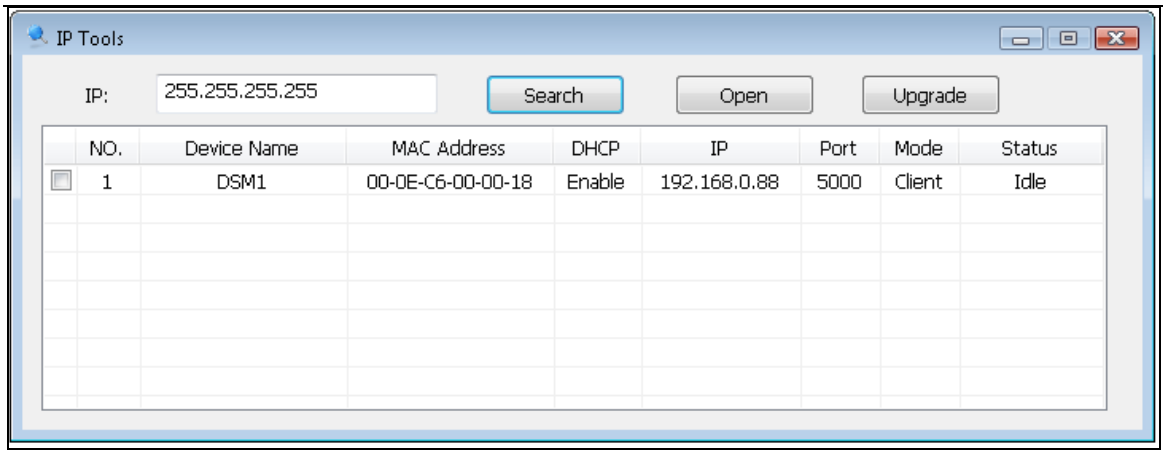

Figure 4

Select the ObseverIP module on your network as shown in Figure 5 (the field will be highlighted) and select the **Open** button (or double click this field) to view the ObserverIP module's webpage within your browser. Alternately, you can type the IP address in your web browser address bar (example, Figure 6):

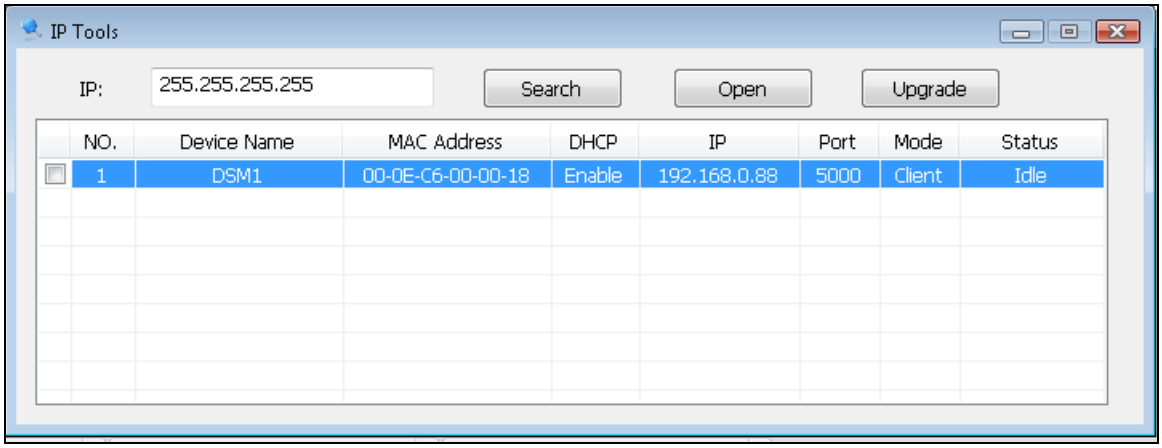

Figure 5

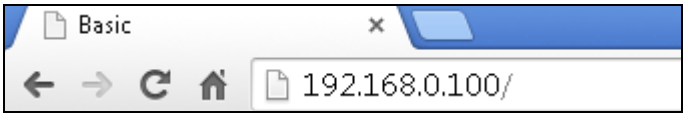

Figure 6

You are now communicating directly to the ObserverIP and can proceed to Section 3.5.

3.4.2 Mac Users

To find the ObserverIP receiver, launch the IP Tools application downloaded here:

www.AmbientWeather.com/observerip.html

The file is compressed as a zip file and must be extracted to run.

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Select the **Search** button to find the ObserverIP on your local area network.

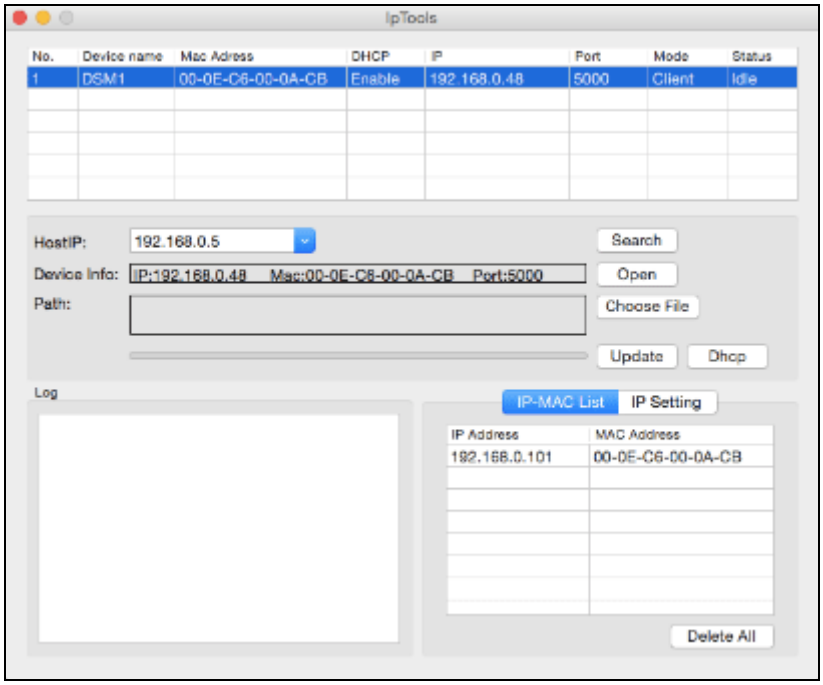

Figure 7

Select the ObseverIP module on your network as shown in Figure 7 (the field will be highlighted) and select the **Open** button (or double click this field) to view the ObserverIP module's webpage within your browser. Alternately, you can type the IP address in your web browser address bar (example, Figure 6):

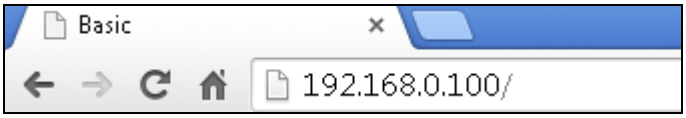

Figure 8

You are now communicating directly to the ObserverIP and can proceed to Section 3.5.

3.4.2 Linux Users

If you use an Apple or Linux operating system, download any commercially available IP scan tool, such as AngryIP Scanner and find the MAC address of the ObserverIP. The MAC address is a unique identifier for internet enabled devices.

The MAC address will be printed on the bottom of the ObseverIP receiver. An example MAC address is 00:0E:C6:00:00:19.

We have included links to free IP Scan Tool applications here:

www.AmbientWeather.com/observerip.html

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Figure 9 shows typical scan results. Locate the IP address of the ObserverIP by cross referencing the Mac address. In the example below, the IP address is 192.168.0.105.

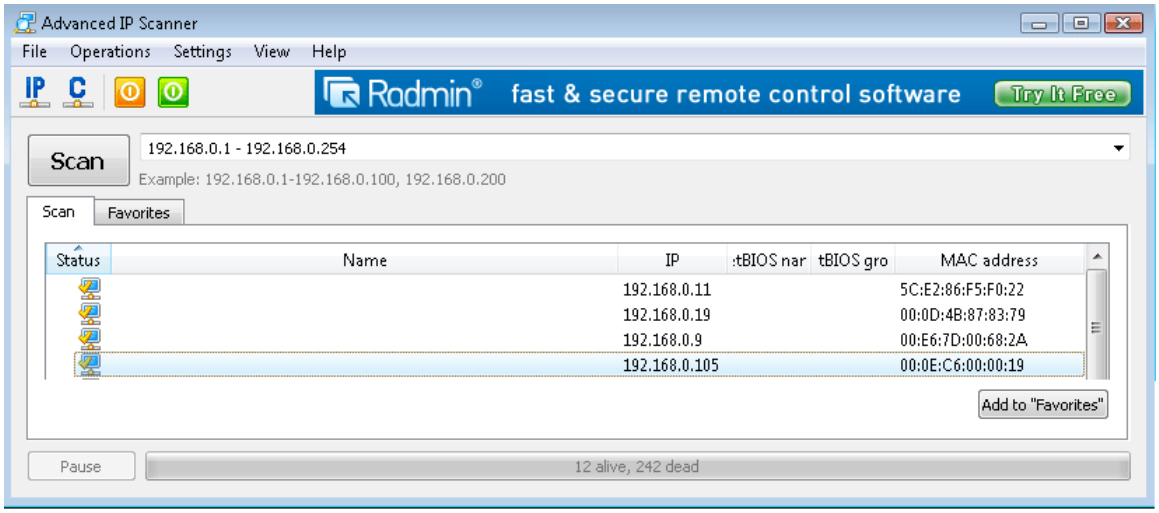

Figure 9

Type the IP address you located from the IP Scan Tool into your web browser (example, Figure 10):

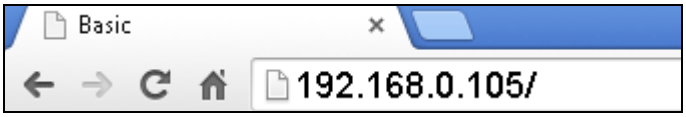

Figure 10

You are now communicating directly to the ObserverIP and can proceed to Section 3.5.

3.5 Local Device Network Settings (optional)

From your web browser, access the ObserverIP from the IP address obtained in the previous section.

Select the **Local Network** tab to program the local network settings. Reference Figure 11:

1. **IP Address.** The default setting is receive automatically (DCHP), **which is recommended**. The network will assign an IP address. To statically assign an IP address, select **Static** from the pull down menu. This will prevent the IP address from changing each time you power up the ObserverIP receiver.
2. **Static IP Address.** If Static is selected as the IP address, enter the IP address you wish to access the ObserverIP module.
3. **Static Subnet Mask.** Default is 255.255.255.0. This should not be changed unless you are familiar with networking and subnet masking.
4. **Static Default Gateway.** This is typically the IP address of your router.
5. **Static DNS Server.** This is your DNS Server setting based on your router connection.
6. **Server Listening Port.** Default is 5000. Enter an integer between 1024 – 65535.

If you made any Static IP Address changes (not recommended), to confirm these changes, select **Apply** and **Reboot**.

Note: If you incorrectly set the static IP settings and can no longer access the ObserverIP, press the reset button on the back of the module.

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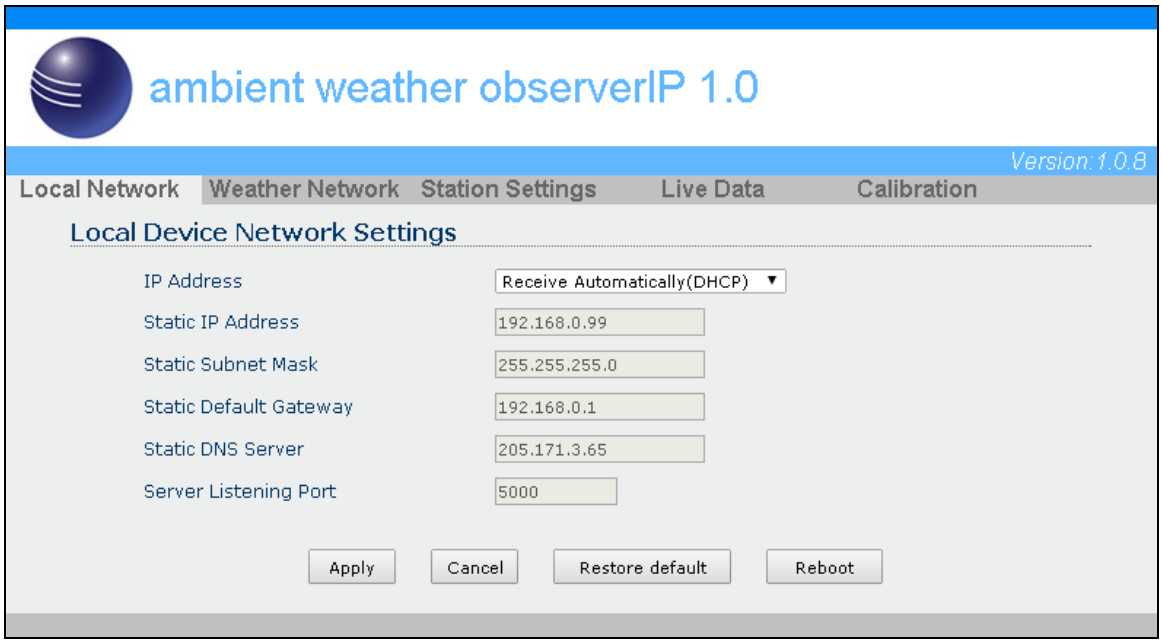

Figure 11

3.6 Weather Network Settings

Select the **Weather Network** tab to program the Weather Underground station settings. Reference Figure 12:

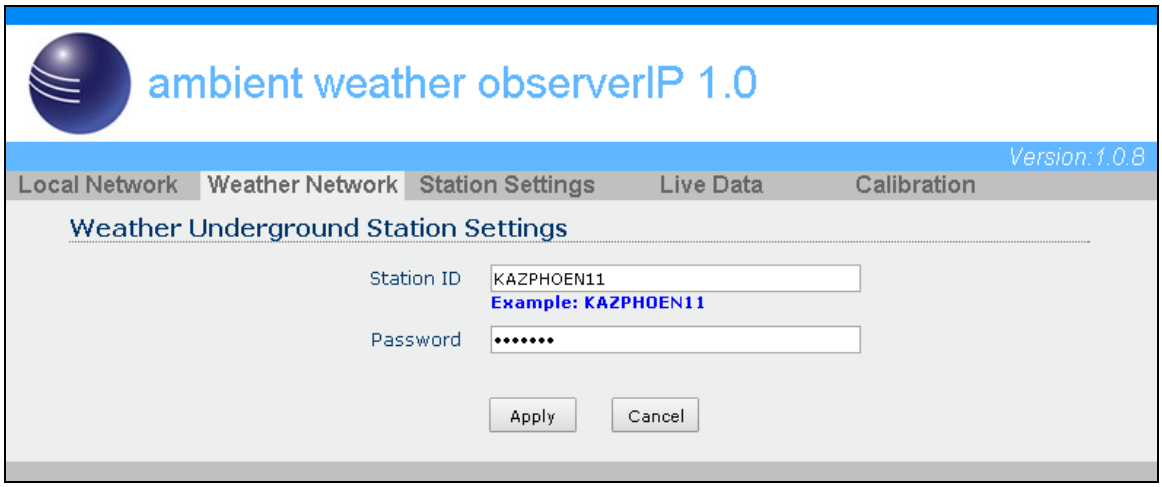

Figure 12

Enter the Station ID and password obtained from Wunderground.com®. Select the **Apply** button to confirm changes.

Note: How to create a Wunderground.com® account and station ID.

1. Join the Wunderground.com® Community. Visit:

   https://www.wunderground.com/members/signup.asp

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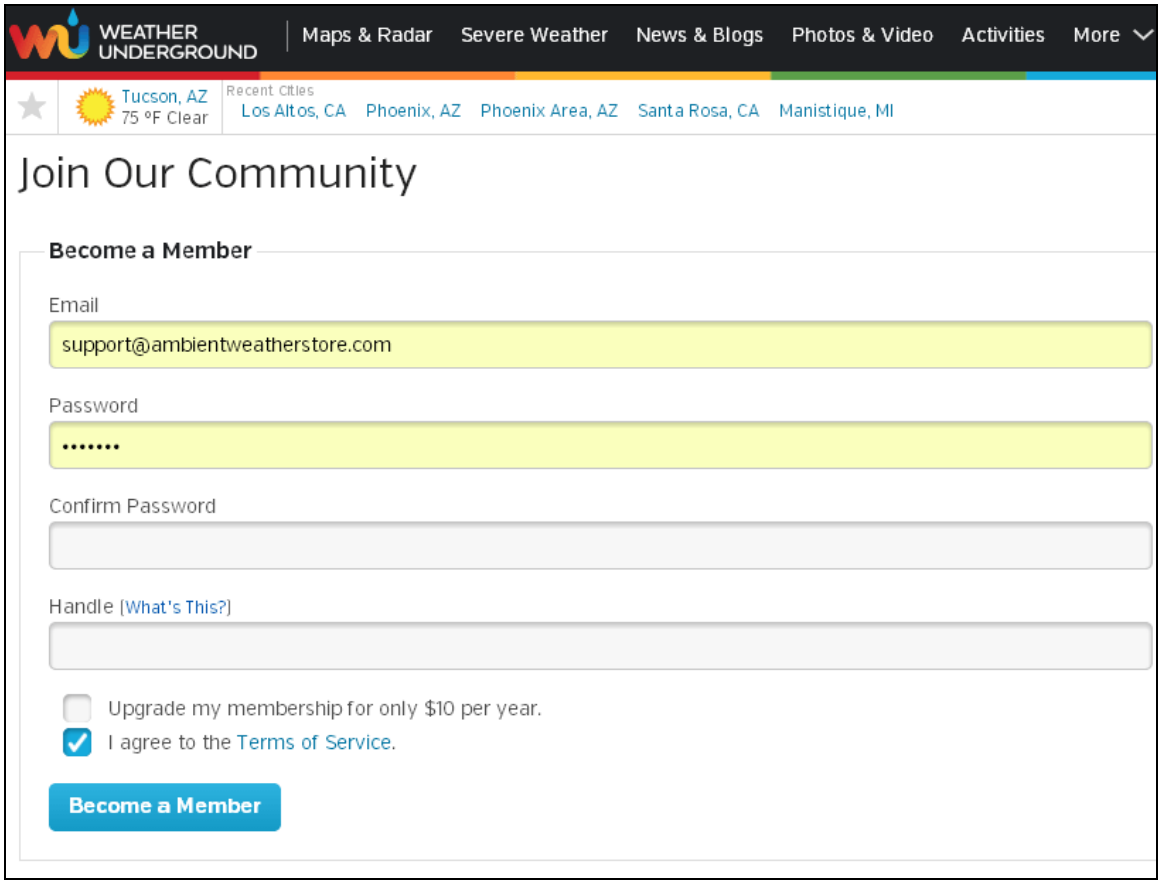
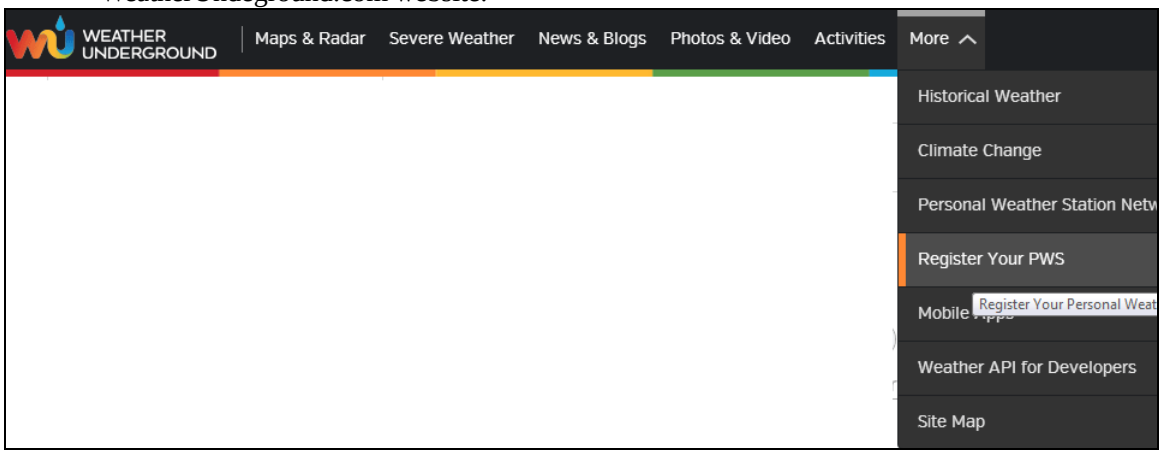
and sign up with Wunderground.com.



2. **Join the Personal Weather Station (PWS) network**. Visit:

   http://www.wunderground.com/personal-weather-station/signup

   or select **More | Register Your PWS** from the menu at the top of the WeatherUndeground.com website:



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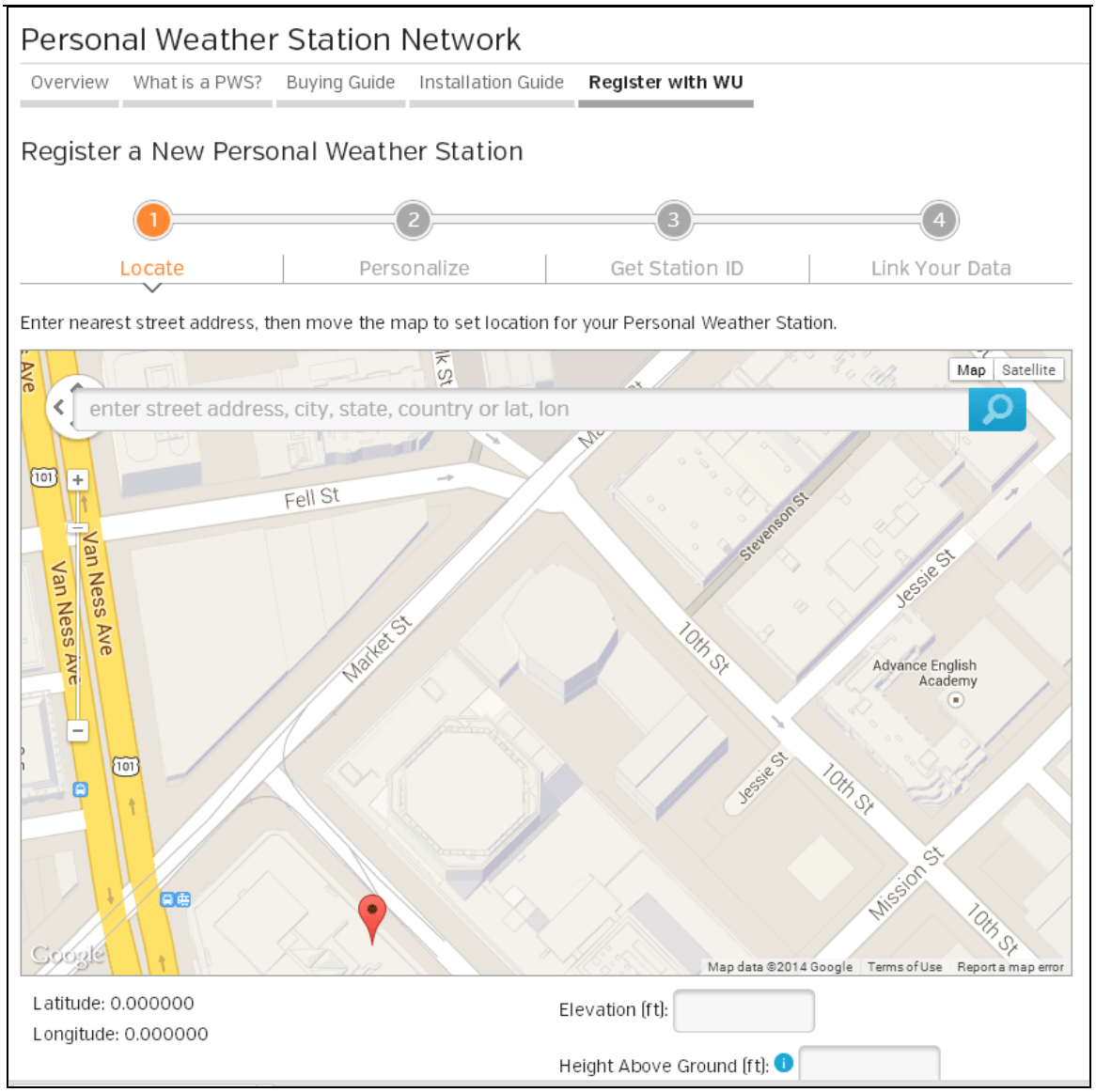

Enter the Station ID obtained and password you entered into the ObserverIP Weather Server panel.

Note: If Wunderground.com is not updating, make sure the Station ID and Password are correct. The Station ID is all capital letters, and the password is case sensitive. The most common issue is substituting an O for 0 in the Station ID. Example, You live in Phoenix, AZ and you are station number 11:

KAZPHOEN11, not KAZPH0EN11
K = USA station designation
AZ = Arizona
PHOEN = Phoenix
11= station 11 in Phoenix, AZ

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3.7 Viewing your Data on Wunderground.com

There are several ways to view your data on Wunderground:

3.7.1 Web Browser

Visit:

http://www.wunderground.com/personal-weather-station/dashboard?ID=STATIONID

where **STATIONID** is your personal station ID (example, KAZSEDON12).

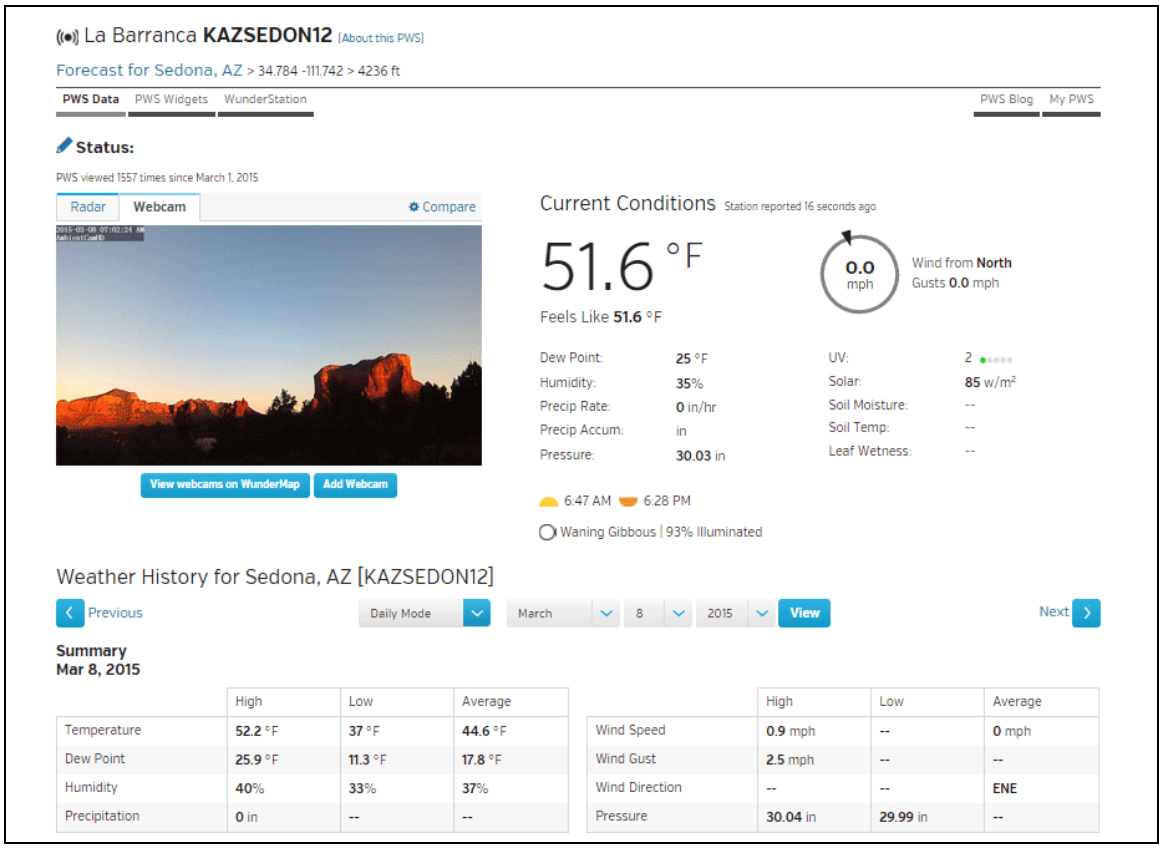

Figure 13

3.7.2 WunderStation iPad App

Visit:

http://www.WunderStation.com

to download the WunderStation iPad app.

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Figure 14

3.7.3 Mobile Apps

Visit:

http://www.wunderground.com/download/index.asp

for a complete list of Mobile apps for iOS and Android. Alternately, you can find your data on your mobile device's web brower.

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Figure 15

3.8 Station Settings

Select **Apply** to confirm any of the changes in this section.

3.8.1 Weather Station Settings

Weather Station Model Number: Enter your weather station model number.

3.8.2 Time Zone Setting

Enter your local time zone and daylight Savings Time.

3.8.3 Daylight Savings Time

Enter **off** if you live in Hawaii or Arizona, where DST is not observed. Enter **on** if you live anywhere else, even if you are currently observing standard time.

3.8.4 Units of Measure

Enter your preferred units of measure for each parameter.

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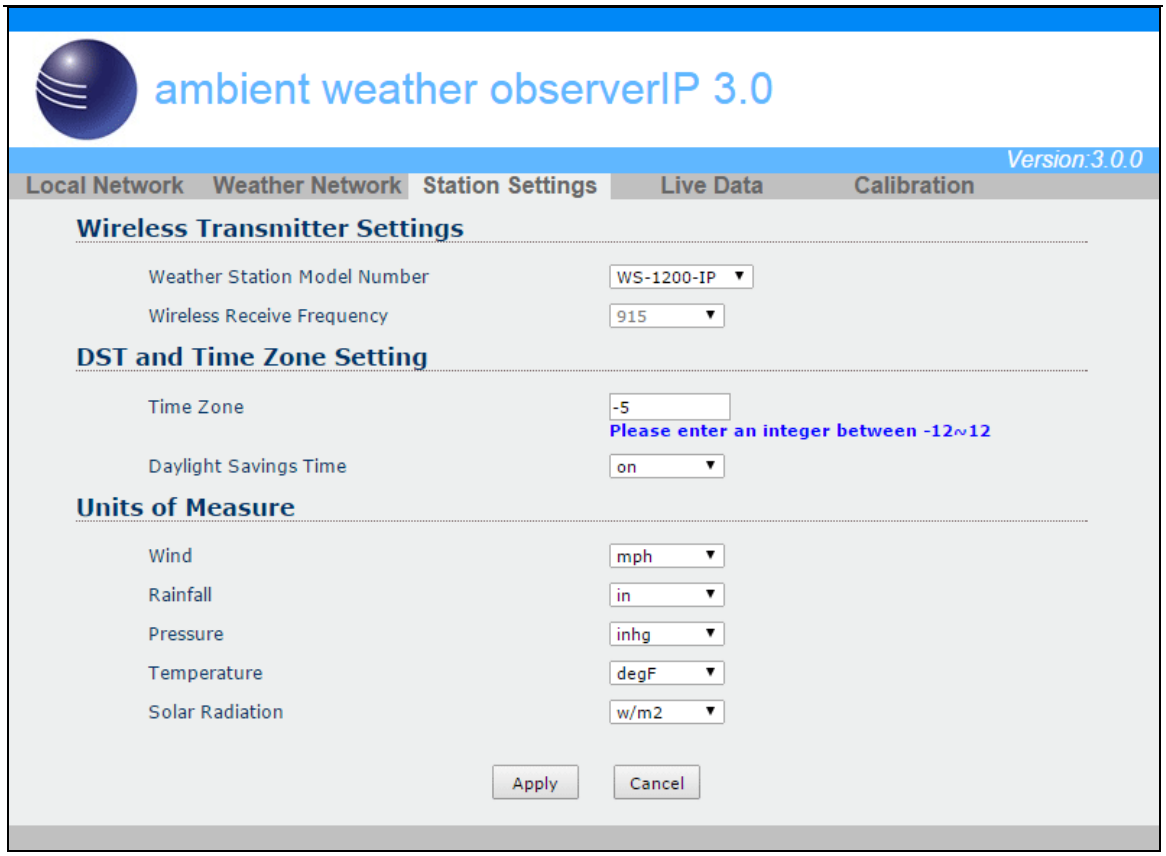

Figure 16

3.9 Live Data

Select the **Live Data** tab to view your live data from the weather station. To freeze the live data updates, select the **Stop Refresh** button.

3.9.1 Reset and Change Rain Totals

During the installation of your weather station, you may report false rain do to vibration of the tipping mechanism. To reset the rain to 0.00, select the **Rain Reset** button as shown in Figure 17.

During rain gauge cleaning, the tipping mechanism may record false rain. Before rain gauge cleaning, record the rain totals before and after the cleaning procedure, then correct the daily, weekly, monthly and yearly totals.

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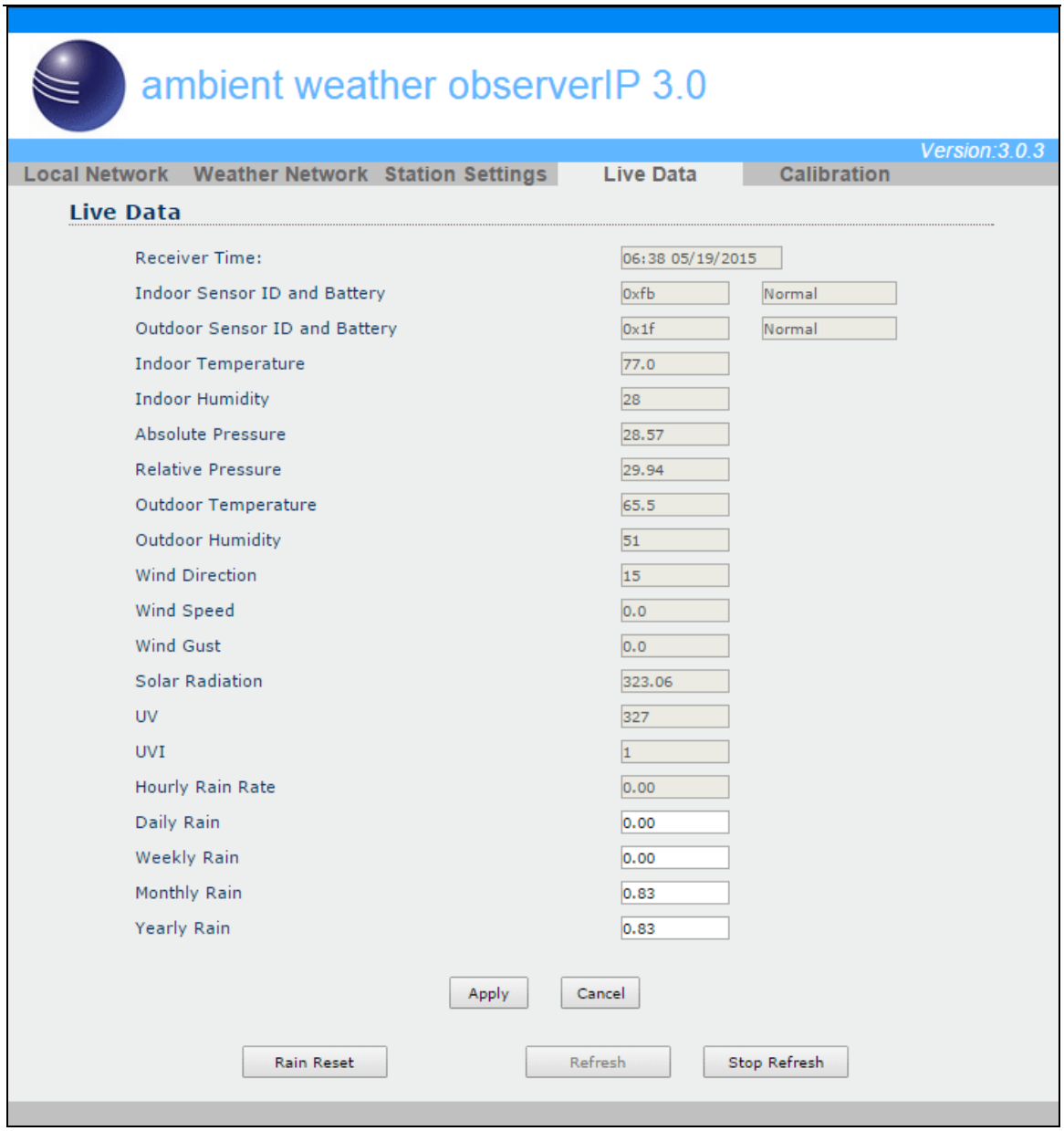

Figure 17

3.10 Calibration

Select the Calibration tab to view your calibration data from the weather station. Select the **Apply** button to confirm changes.

Calibration of most parameters is not required, with the exception of Relative Pressure, which must be calibrated to sea-level to account for altitude effects. For more information on sea-level pressure calibration, please reference note (3) below.

3.10.1 Relative Barometric Pressure Calibration Example

The following is an example of calibrating the relative pressure. Your results will vary.

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1. The local relative pressure from TV, the newspaper or the internet for the official station in your area is 30.12 inHg.
2. From the Live Data panel, your absolute pressure (measured, and not corrected to sea-level) reads 28.90 inHg.
3. Reference Figure 18. Enter the following offset in the Calibration panel for Relative Pressure Offset:

Relative Pressure Offset = 30.12 – 28.90 = **1.22**

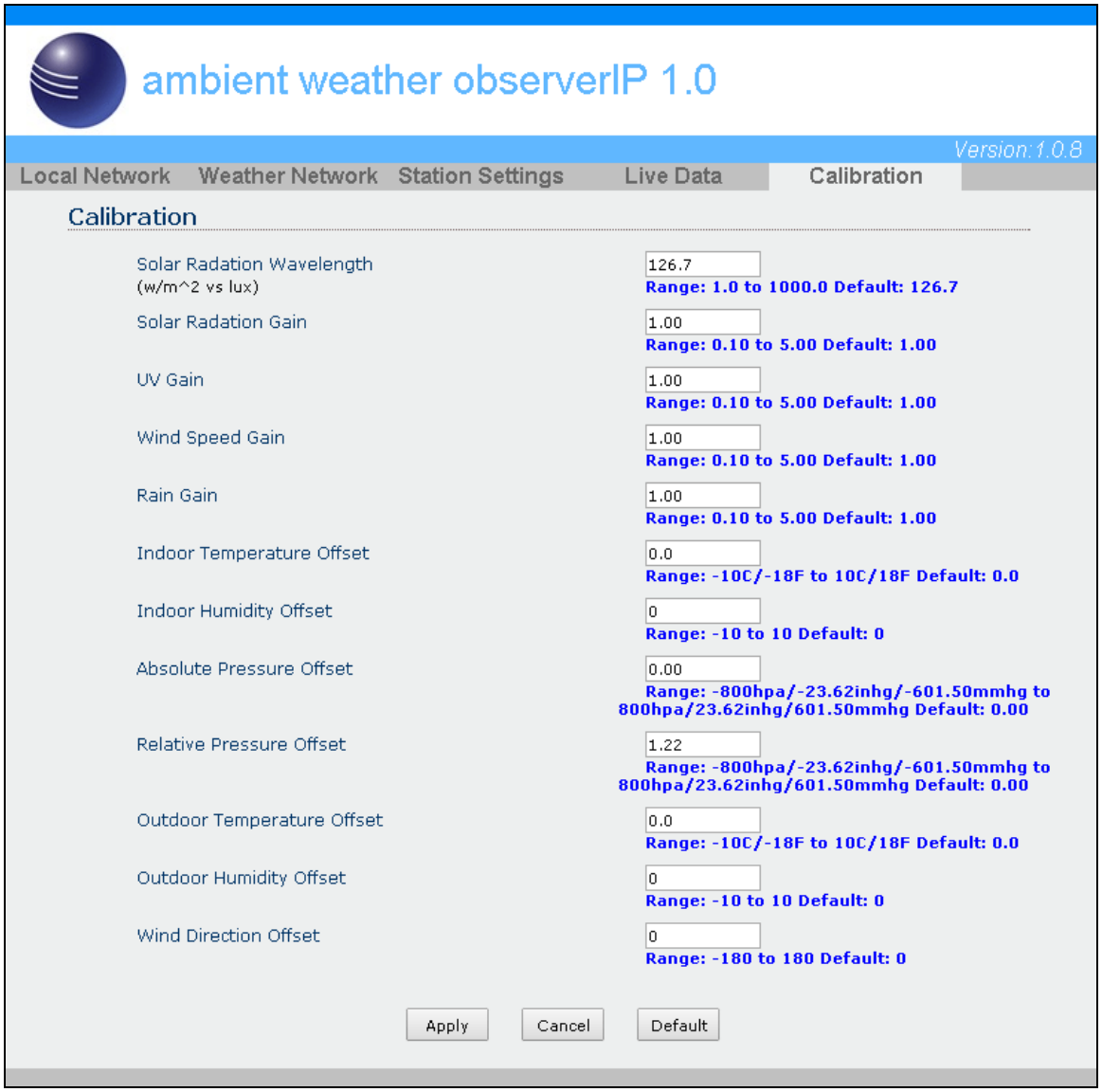

Figure 18

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Parameter	Type of Calibration	Default	Typical Calibration Source
Temperature	Offset	Current Value	Red Spirit or Mercury Thermometer (1)
Humidity	Offset	Current Value	Sling Psychrometer (2)
ABS Barometer	Offset	Current Value	Calibrated laboratory grade barometer
REL Barometer	Offset	Current Value	Local airport (3)
Wind Direction	Offset	Current Value	GPS, Compass (4)
Solar Radiation	Gain	1.00	Calibrated laboratory grade solar radiation sensor
1 w/m^2	Gain	126.7 lux	Solar radiation conversion from lux to w/m^2 for wavelength correction (5)
Wind	Gain	1.00	Calibrated laboratory grade wind meter (6)
Rain	Gain	1.00	Sight glass rain gauge with an aperture of at least 4” (7)
Daily Rain	Offset	Current Value	Apply an offset if the weather station was not operating for the entire day.
Weekly Rain	Offset	Current Value	Apply an offset if the weather station was not operating for the entire week.
Monthly Rain	Offset	Current Value	Apply an offset if the weather station was not operating for the entire month.
Yearly Rain	Offset	Current Value	Apply an offset if the weather station was not operating for the entire year.

(1) Temperature errors can occur when a sensor is placed too close to a heat source (such as a building structure, the ground or trees).

To calibrate temperature, we recommend a mercury or red spirit (fluid) thermometer. Bi-metal (dial) and digital thermometers (from other weather stations) are not a good source and have their own margin of error. Using a local weather station in your area is also a poor source due to changes in location, timing (airport weather stations are only updated once per hour) and possible calibration errors (many official weather stations are not properly installed and calibrated).

Place the sensor in a shaded, controlled environment next to the fluid thermometer, and allow the sensor to stabilize for 48 hours. Compare this temperature to the fluid thermometer and adjust the ObserverIP receiver to match the fluid thermometer.

(2) Humidity is a difficult parameter to measure electronically and drifts over time due to contamination. In addition, location has an adverse affect on humidity readings (installation over dirt vs. lawn for example).

Official stations recalibrate or replace humidity sensors on a yearly basis. Due to manufacturing tolerances, the humidity is accurate to ± 5%. To improve this accuracy, the indoor and outdoor humidity can be calibrated using an accurate source, such as a sling

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psychrometer.

(3) The ObserverIP receiver displays two different pressures: absolute (measured) and relative (corrected to sea-level).

To compare pressure conditions from one location to another, meteorologists correct pressure to sea-level conditions. Because the air pressure decreases as you rise in altitude, the sea-level corrected pressure (the pressure your location would be at if located at sea-level) is generally higher than your measured pressure.

Thus, your absolute pressure may read 28.62 inHg (969 mb) at an altitude of 1000 feet (305 m), but the relative pressure is 30.00 inHg (1016 mb).

The standard sea-level pressure is 29.92 in Hg (1013 mb). This is the average sea-level pressure around the world. Relative pressure measurements greater than 29.92 inHg (1013 mb) are considered high pressure and relative pressure measurements less than 29.92 inHg are considered low pressure.

To determine the relative pressure for your location, locate an official reporting station near you (the internet is the best source for real time barometer conditions, such as Weather.com or Wunderground.com), and set your weather station to match the official reporting station.

(4) Only use this if you improperly installed the weather station sensor array, and did not point the direction reference to true north.

(5) The default conversion factor based on the wavelength for bright sunlight is 126.7 lux / w/m^2. This variable can be adjusted by photovoltaic experts based on the light wavelength of interest, but for most weather station owners, is accurate for typical applications, such as calculating evapotransporation and solar panel efficiency.

(6) Wind speed is the most sensitive to installation constraints. The rule of thumb for properly installing a wind speed sensor is 4 x the distance of the tallest obstruction. For example, if your house is 20’ tall and you mount the sensor on a 5’ pole:

Distance = 4 x (20 – 5)’ = 60’.

Many installations are not perfect and installing the weather station on a roof can be difficult. Thus, you can calibrate for this error with a wind speed multiplier.

In addition to the installation challenges, wind cup bearings (moving parts) wear over time.

Without a calibrated source, wind speed can be difficult to measure. We recommend using a calibrated wind meter (available from Ambient Weather) and a constant speed, high speed fan.

(7) The rain collector is calibrated at the factory based on the funnel diameter. The bucket tips every 0.01” of rain (referred to as resolution). The accumulated rainfall can be compared to a sight glass rain gauge with an aperture of at least 4”. The following is a link to an accurate sight glass rain gauge:

http://www.ambientweather.com/stprraga.html

Make sure you periodically clean the rain gauge funnel.

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Note: The purpose of calibration is to fine tune or correct for any sensor error associated with the devices margin of error. Errors can occur due to electronic variation (example, the temperature sensor is a resistive thermal device or RTD, the humidity sensor is a capacitance device), mechanical variation, or degradation (wearing of moving parts, contamination of sensors).

Calibration is only useful if you have a known calibrated source you can compare it against, and is optional. This section discusses practices, procedures and sources for sensor calibration to reduce manufacturing and degradation errors. Do not compare your readings obtained from sources such as the internet, radio, television or newspapers. The purpose of your weather station is to measure conditions of your surroundings, which vary significantly from location to location.

4. Updating Firmware

You must own a PC or Mac to update the firmware. Sorry, Linux products are currently not supported. Ambient Weather will update your ObserverIP at no cost (appropriate shipping charges will apply).

4.1 PC Users

1. Download the latest version of IPTools and firmware at:

   http://www.ambientweather.com/observerip.html

2. **Important Note: Close all of other applications while running the firmware update. This will insure the upgrade process will not be interrupted. Make sure your PC and OberverIP are connected to the same router prior to upgrading the firmware.**

3. Launch the IP Tools application as referenced in Section 3.4.1, and locate the ObserverIP on your network. Reference Figure 19. Select the Upgrade button to begin the firmware upgrade. As shown in this figure, the IP address of the ObserverIP is 192.168.0.7. Make a note of your IP address (your results will vary).

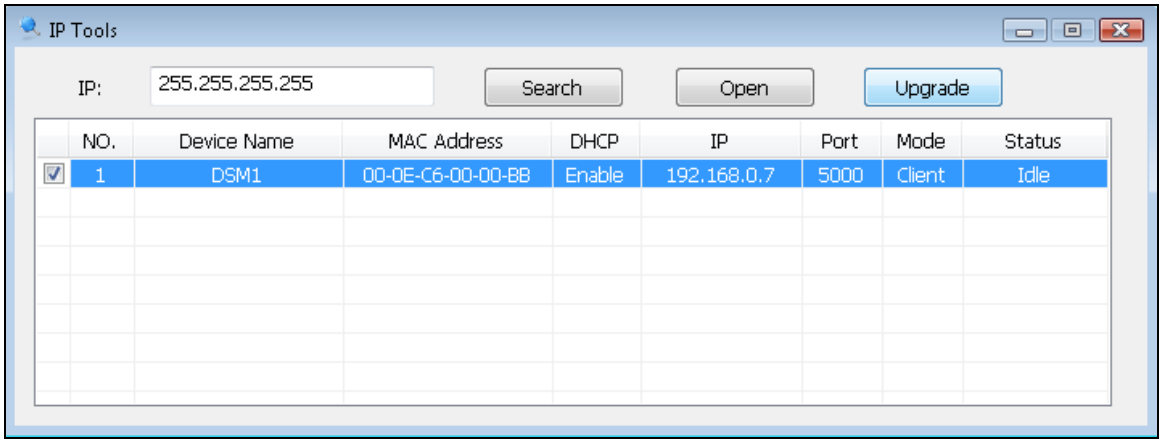

Figure 19

4. Reference Figure 20. Select the **Select File** button, and browse to the location of the file you downloaded in Step 1.

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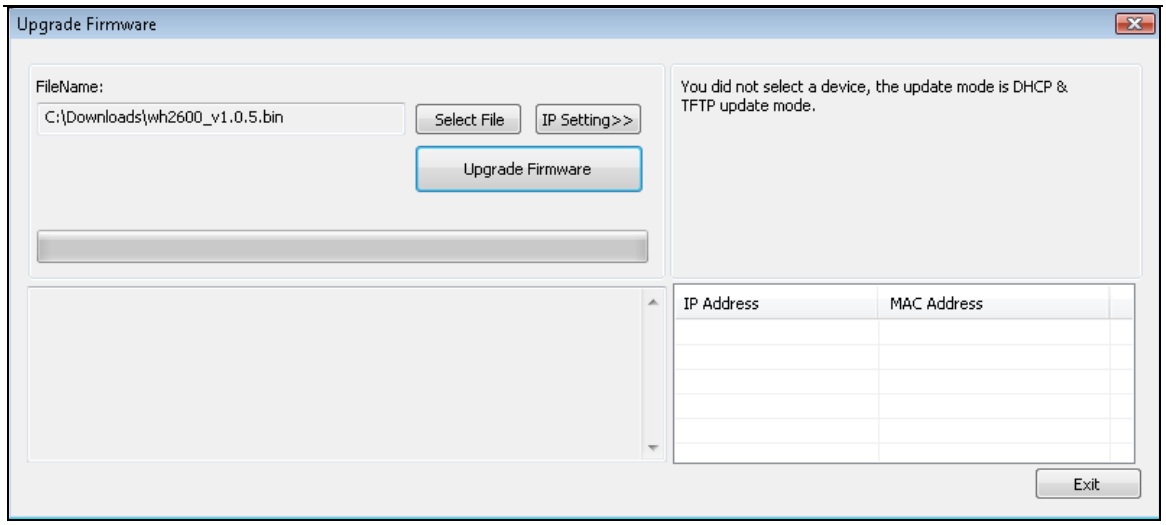

Figure 20

5. Select the Upgrade **Firmware button**. Reference Figure 21. The dialog box will display **Received a Read Request** from the ObserverIP module. A green progress bar will provide you with the upgrade status.

   DO NOT OPERATE THE MOUSE OR KEYBOARD WHEN UPGRADING to prevent interruption of the upgrade.

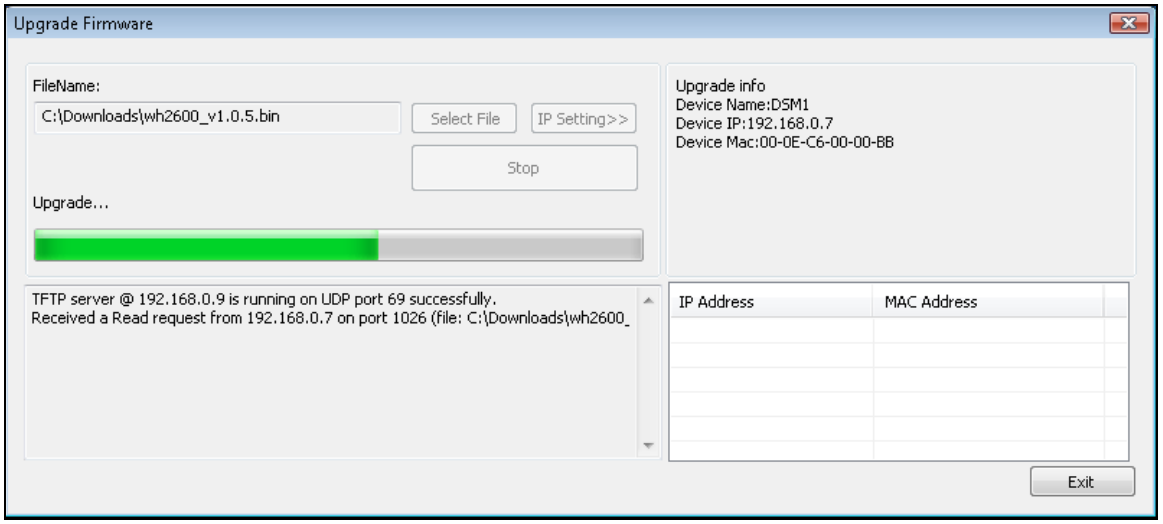

Figure 21

6. Once the firmware upgrade is complete, the dialog box will display **Read session is completed successfully**, as shown in Figure 22.

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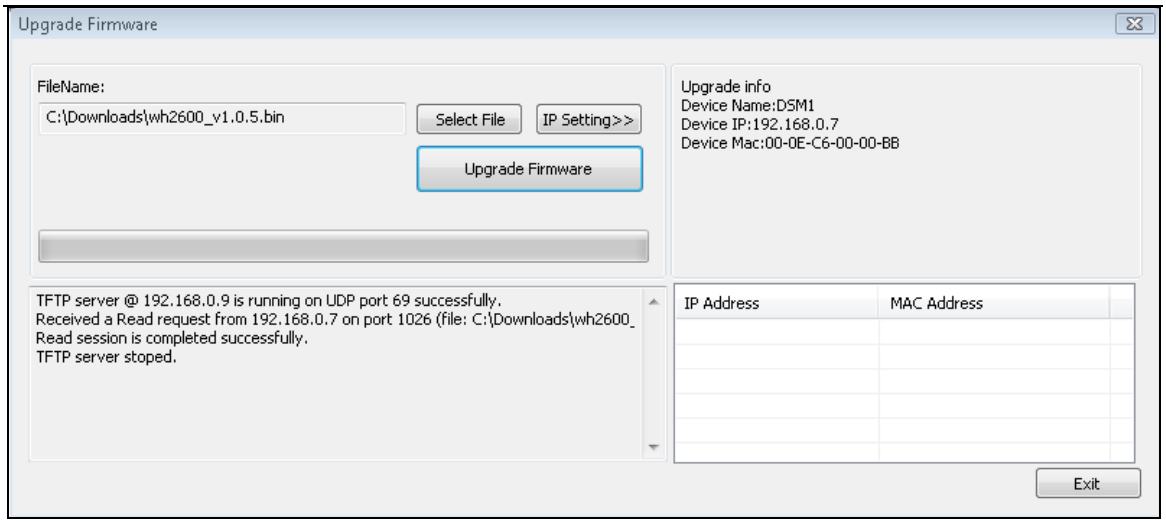

Figure 22

7. Wait about one minute for the ObserverIP module to reboot. You can now **Exit** the upgrade window, and access the module again, as referenced in Section 3.4.

You may be required to enter some settings, so check all of the panels for completeness.

4.2 Mac Users

1. Download the latest version of firmware at:

http://www.ambientweather.com/observerip.html

Important Note: Close all of other applications while running the firmware update. This will insure the upgrade process will not be interrupted. Make sure your PC and OberverIP are connected to the same router prior to upgrading the firmware.

2. Launch the IP Tools application as referenced in Section 3.4.2, and locate the ObserverIP on your network. Reference Figure 19.

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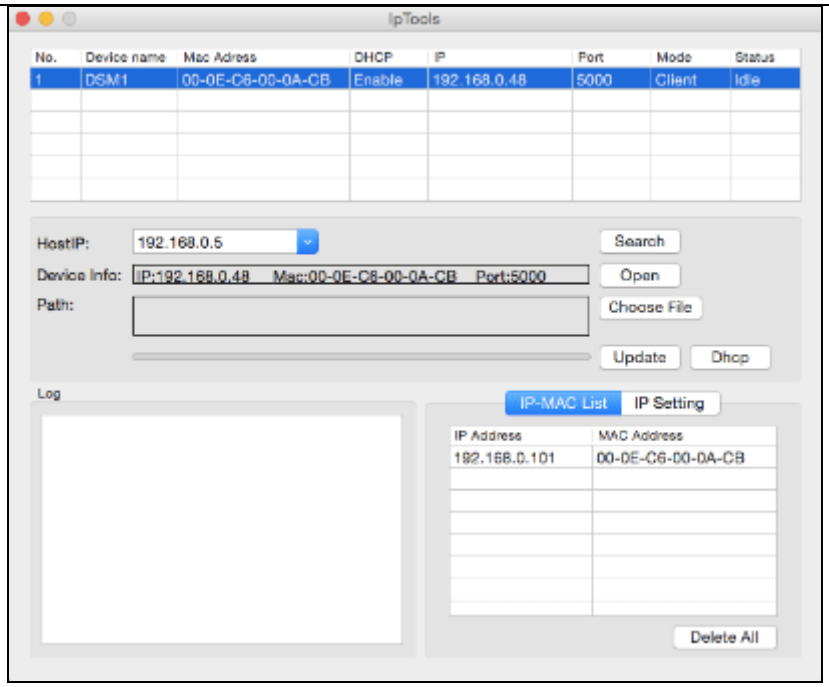

Figure 23

3. Reference Figure 20. Select the **Choose File** button, and browse to the location of the file you downloaded in Step 1.

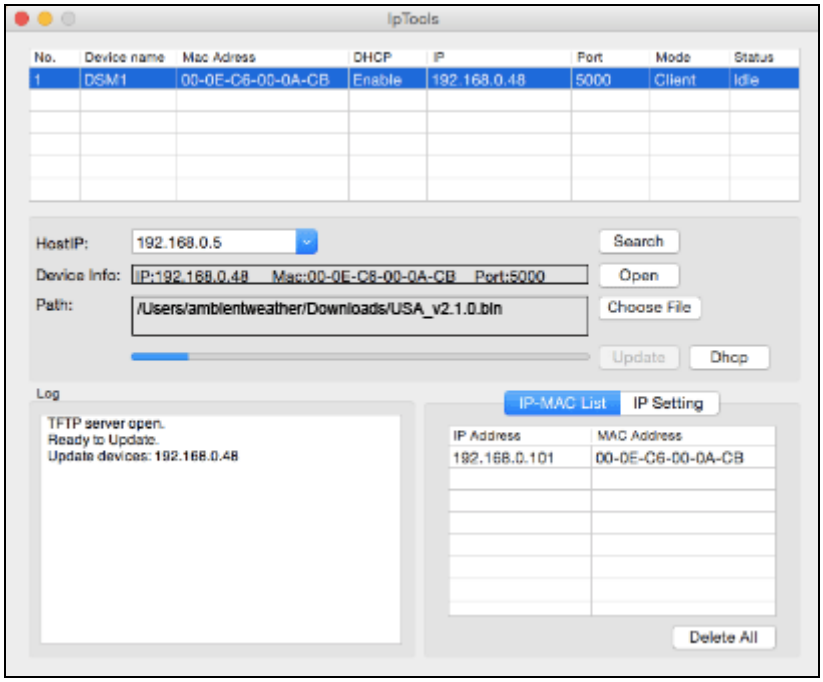

Figure 24

4. Select the **Update** button. Reference Figure 21. The dialog box will display **Ready to Update** from the ObserverIP module. A progress bar will provide you with the upgrade status.

   DO NOT OPERATE THE MOUSE OR KEYBOARD WHEN UPGRADING to prevent

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interruption of the upgrade.

5. Once the firmware upgrade is complete, the dialog box will display **Update Success**.

6. Wait about one minute for the ObserverIP module to reboot. You can now **Exit** the upgrade window, and access the module again, as referenced in Section 3.4.

You may be required to enter some settings, so check all of the panels for completeness.

If the update is not successful, restart IP Tools and try again. You do not have to locate the ObserverIP module on the network as it will broadcast the request to all devices on your network.

5. Glossary of Terms

Term	Definition
Absolute Barometric Pressure	Absolute pressure is the measured atmospheric pressure and is a function of altitude, and to a lesser extent, changes in weather conditions. Absolute pressure is not corrected to sea-level conditions. *Refer to Relative Barometric Pressure.*
Accuracy	Accuracy is defined as the ability of a measurement to match the actual value of the quantity being measured.
Barometer	A barometer is an instrument used to measure atmospheric pressure.
Calibration	Calibration is a comparison between measurements – one of known magnitude or correctness of one device (standard) and another measurement made in as similar a way as possible with a second device (instrument).
Dew Point	The dew point is the temperature at which a given parcel of humid air must be cooled, at constant barometric pressure, for water vapor to condense into water. The condensed water is called dew. The dew point is a saturation temperature. The dew point is associated with relative humidity. A high relative humidity indicates that the dew point is closer to the current air temperature. Relative humidity of 100% indicates the dew point is equal to the current temperature and the air is maximally saturated with water. When the dew point remains constant and temperature increases, relative humidity will decrease.
HectoPascals (hPa)	Pressure units in SI (international system) units of measurement. Same as millibars (1 hPa = 1 mbar)
Hygrometer	A hygrometer is a device that measures relative humidity. Relative humidity is a term used to describe the amount or percentage of water vapor that exists in air.
Inches of Mercury (inHg)	Pressure in Imperial units of measure. 1 inch of mercury = 33.86 millibars
Rain Gauge	A rain gauge is a device that measures liquid precipitation (rain), as opposed to solid precipitation (snow gauge) over a set period of time. All digital rain gauges are self emptying or self dumping (also referred to as tipping rain gauge). The precision of the rain gauge is based on the

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Term	Definition
	volume of rain per emptying cycle.
Range	Range is defined as the amount or extent a value can be measured.
Relative Barometric Pressure	Measured barometric pressure relative to your location or ambient conditions.
Resolution	Resolution is defined as the number of significant digits (decimal places) to which a value is being reliably measured.
Solar Radiation	A solar radiation sensor measures solar energy from the sun. Solar radiation is radiant energy emitted by the sun from a nuclear fusion reaction that creates electromagnetic energy. The spectrum of solar radiation is close to that of a black body with a temperature of about 5800 K. About half of the radiation is in the visible short-wave part of the electromagnetic spectrum. The other half is mostly in the near-infrared part, with some in the ultraviolet part of the spectrum.
Thermometer	A thermometer is a device that measures temperature. Most digital thermometers are resistive thermal devices (RTD). RTDs predict change in temperature as a function of electrical resistance.
Wind Vane	A wind vane is a device that measures the direction of the wind. The wind vane is usually combined with the anemometer. Wind direction is the direction from which the wind is blowing.

6. Specifications

6.1 Wireless Specifications

- Line of sight wireless transmission (in open air): 330 feet, 100 feet under most conditions
- Update Rate: Outdoor Sensor: 16 seconds, Indoor Sensor: 64 seconds
- Frequency: 915 MHz

6.2 Measurement Specifications

The following table provides the specifications for the measured parameters.

Measurement	Range	Accuracy	Resolution
Barometric Pressure	8.85 to 32.50 inHg	± 0.08 inHg (within range of 27.13 to 32.50 inHg)	0.01 inHg

6.3 Power Consumption

- ObserverIp Receiver : 5V DC Adaptor (included)

7. Troubleshooting Guide

If your question is not answered here, you can contact us as follows:

1. Email Support: support@ambientweather.com
2. Live Chat Support: www.ambientweather.com/chat.html (M-F 8am to 4pm Arizona Time)
3. Technical Support: 480-346-3398 (M-F 8am to 4pm Arizona Time)

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Problem	Solution
Wireless remote (thermo-hygrometer) not reporting in to ObserverIP Receiver.	The maximum line of sight communication range is about 300'. Move the sensor assembly closer to the ObserverIP receiver. Install a fresh set of batteries in the remote sensor(s). Make sure the remote sensors are not transmitting through solid metal (acts as an RF shield), or earth barrier (down a hill). Radio Frequency (RF) Sensors cannot transmit through metal barriers (example, aluminum siding) or multiple, thick walls. Move the ObserverIP receiver around electrical noise generating devices, such as computers, TVs and other wireless transmitters or receivers.
Outdoor sensor array does not communicate to the ObserverIP Receiver.	The sensor array may have initiated properly and the data is registered by the ObserverIP receiver as invalid, and the sensory array must be reset. The reset button is **next to the LED**, near the mounting point on the sensor array. With an open ended paperclip, press the reset button for 3 seconds to completely discharge the voltage. Take out the batteries and wait one minute, while covering the solar panel to drain the voltage. Put batteries back in and resync with ObserverIP receiver by powering down and up the ObserverIP receiver with the sensor array about 10 feet away. Bring the sensor array inside the house (you can disconnect it from the rest of the sensors). The LED next to the battery compartment will flash every 16 seconds. If the LED is not flashing every 16 seconds… Replace the batteries in the outside sensor array. Non-rechargeable batteries are OK for testing purposes. If the batteries were recently replaced, check the polarity. If the sensor is flashing every 48 seconds, proceed to the next step. There may be a temporary loss of communication due to reception loss related to interference or other location factors, or the batteries may have been changed in the sensor array and the ObserverIP receiver has not been reset. The solution may be as simple as **powering down and up the ObserverIP**. Replace the batteries in the outside sensor array. Non-rechargeable batteries are OK for testing purposes. With the sensor array and **ObserverIP** 10 feet away from each other, remove AC power from the ObserverIP receiver and wait 10 seconds. Re-connect power.
Absolute pressure does not agree with official reporting station	You may be viewing the relative pressure, not the absolute pressure. Select the absolute pressure. Make sure you properly calibrate the sensor to an official local weather station. Reference Section 3.10 for details.

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Problem	Solution
Data not reporting to Wunderground.com	1. Confirm your password is correct. It is the password you registered on Wunderground.com. Your Wunderground.com password cannot begin with a non-alphanumeric character (a limitation of Wundeground.com, not the station). Example, $oewkrf is not a valid password, but oewkrf$ is valid. 2. Confirm your station ID is correct. The station ID is all caps, and the most common issue is substituting an O for a 0 (or visa versa). Example, KAZPHOEN11, not KAZPH0EN11. 3. Make sure your time zone is set properly. If incorrect, you may be reporting old data, not real time data. 4. Check your router firewall settings. The ObserverIP sends data via Port 80.
Only the Power, Link and ACT lights are lit and the ObserverIP module does not communicate to the server.	The firmware will need to be reloaded. 1. Download the latest firmware here: http://www.AmbientWeather.com/observerip.html 2. Power down the ObserverIP module but leave connected to your router. 3. Launch the IP Tools application as referenced in Section 3.4.1. Since the module is powered down, you will not be able to locate it on your network, but proceed anyway. 4. Select the Upgrade button. 5. Reference Figure 20. Select the **Select File** button, and browse to the location of the file you downloaded in Step 1. 6. Select the Upgrade **Firmware button**. 7. Plug in the ObserverIP module. The software will locate the device on your network and begin the update. Reference Figure 21. The dialog box will display **Received a Read Request** from the ObserverIP module. A green progress bar will provide you with the upgrade status. **DO NOT OPERATE THE MOUSE OR KEYBOARD WHEN UPGRADING** to prevent interruption of the upgrade. 7. Once the firmware upgrade is complete, the dialog box will display **Read session is completed successfully**, as shown in Figure 22. 8. Wait about one minute for the ObserverIP module to reboot. You can now **Exit** the upgrade window, and access the module again, as referenced in Section 3.4.

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Problem	Solution
	All of the lights should be on except the Server light (you will need to reprogram the Wunderground.com settings).

8. Liability Disclaimer

Please help in the preservation of the environment and return used batteries to an authorized depot.
The electrical and electronic wastes contain hazardous substances. Disposal of electronic waste in wild country and/or in unauthorized grounds strongly damages the environment.

Reading the "User manual" is highly recommended. The manufacturer and supplier cannot accept any responsibility for any incorrect readings and any consequences that occur should an inaccurate reading take place.

This product is designed for use in the home only as indication of weather conditions. This product is not to be used for medical purposes or for public safety information.

The specifications of this product may change without prior notice.

This product is not a toy. Keep out of the reach of children.

No part of this manual may be reproduced without written authorization of the manufacturer.

Ambient, LLC WILL NOT ASSUME LIABILITY FOR INCIDENTAL, CONSEQUENTIAL, PUNITIVE, OR OTHER SIMILAR DAMAGES ASSOCIATED WITH THE OPERATION OR MALFUNCTION OF THIS PRODUCT.

9. FCC Statement

Statement according to FCC part 15.19:
This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Statement according to FCC part 15.21:
Modifications not expressly approved by this company could void the user's authority to operate the equipment.
Statement according to FCC part 15.105:
NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

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- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

10. Warranty Information

Ambient, LLC provides a 1-year limited warranty on this product against manufacturing defects in materials and workmanship.

This limited warranty begins on the original date of purchase, is valid only on products purchased and only to the original purchaser of this product. To receive warranty service, the purchaser must contact Ambient, LLC for problem determination and service procedures.

Warranty service can only be performed by a Ambient, LLC. The original dated bill of sale must be presented upon request as proof of purchase to Ambient, LLC.

Your Ambient, LLC warranty covers all defects in material and workmanship with the following specified exceptions: (1) damage caused by accident, unreasonable use or neglect (lack of reasonable and necessary maintenance); (3) damage resulting from failure to follow instructions contained in your owner's manual; (4) damage resulting from the performance of repairs or alterations by someone other than an authorized Ambient, LLC authorized service center; (5) units used for other than personal use (6) applications and uses that this product was not intended (7) the products inability to receive a signal due to any source of interference or metal obstructions and (8) extreme acts of nature, such as lightning strikes or floods.

This warranty covers only actual defects within the product itself, and does not cover the cost of installation or removal from a fixed installation, normal set-up or adjustments, claims based on misrepresentation by the seller or performance variations resulting from installation-related circumstances.

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